

Exercise

16. 4. 2015

1. Let $A \in M_{n \times n}(\mathbb{R})$ be a matrix for which all eigenvalues are different from each other. Show that the vector space \mathbb{R}^n admits the splitting

$$\operatorname{im} A \oplus \ker A = \mathbb{R}^n$$

as a direct sum of two A -invariant subspaces.